

FPP RESULTS, FINAL REPORT

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RESUME : Résumé français.

ABSTRACT : *The Floating Potential Probe (FPP) operated on the International Space Station (ISS) from December 2000 to April 2001. During that time, it took many measurements of the ISS floating potential and the electron density and temperature. Those measurements were used as inputs to the Environments WorkBench (EWB) model of ISS potentials (originally developed by SAIC, but now sometimes called the Boeing model) that is used even today to predict charging levels for ISS. FPP is now completely defunct, having been removed and ejected from ISS. With the advent of the new Floating Potential Monitoring Unit (FPMU) on ISS, and the beginning of ISS operations with two large solar array panels instead of just one, a review of FPP measurements can offer comparisons with the new FPMU data and perhaps improve the accuracy of future ISS charging predictions. In particular, FPP measurements during times of low electron temperature and high electron density (the times of worst ISS charging) will be brought forward for comparison with the newly obtained FPMU data.*

1 - TITRE DU PARAGRAPHE /TITLE OF THE PARAGRAPH

1.1 - SOUS TITRE / SUB-TITLE

1.1.1 - Sous titre / Sub-title

Texte du paragraphe. Text of the paragraph.

2 - TITRE DU PARAGRAPHE /TITLE OF THE PARAGRAPH

3 - TITRE DU PARAGRAPHE /TITLE OF THE PARAGRAPH

Modèle d' équation / Example of equation

$$\frac{1}{v} \cdot \frac{\sqrt{a^2+b^2}}{2} < d < \frac{1}{v} \cdot \sqrt{a^2+b^2}$$

[1.]

$$\frac{1}{v} \cdot \frac{\sqrt{a^2+b^2}}{2} < d < \frac{1}{v} \cdot \sqrt{a^2+b^2}$$

4 - TITRE DU PARAGRAPHE /TITLE OF THE PARAGRAPH

4.1 - INTRODUCTION

4.1.1 - *exemple / example*

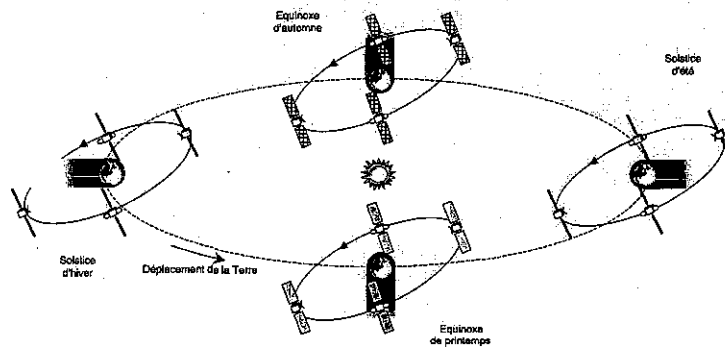


Figure 1 - Titre / Title

5 - BIBLIOGRAPHIE / BIBLIOGRAPHY

- [1] C.K. Purvis, H.B. Garret and A.C. Whittlesey, N.J. Stevens, Design guidelines for assessing and controlling spacecraft charging effects, NASA TP-2361.
- [2] Avoiding problems caused by spacecraft on-orbit internal charging effects, NASA-HDBK-4002.
- [3] Space engineering, electrical and electronic, *European cooperation for space standardization ECSS-E-20A*.

- [4] Space Systems -- Electromagnetic compatibility requirements, *ISO-14302*.
- [5] Cours de technologie spatiale : "Technologie de l'environnement spatial." - Avril. 1986-CEPADUES EDITIONS
- [6] Cours de technologie spatiale : "Environnement spatial : prévention des risques liés aux phénomènes de charge." - Nov. 1990 - CEPADUES EDITIONS
- [7] Cours de technologie spatiale : "Environnement spatial : prévention des risques liés aux phénomènes de charge." - Juin. 1996 - CEPADUES EDITIONS